## NextGen: Transforming the Air Transportation System

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## NextGen Challenge

- The Current System is Not Performing Adequately
  - Delays up 20% since 2006
- The Current System is Not Scalable
  - Demand increasing need system scalable to three times capacity
  - Impractical to add more sectors and controllers
  - Single voice channel radio limits capacity
- The NextGen Vision Offers a Transformation that Resolves Current Inadequacies
- Cost of Not Moving to NextGen
  - >\$40 billion by year 2020, and >\$100 billion by year 2030

## NextGen: The Short Story

NextGen is a **Congressionally mandated** initiative to modernize the air transportation system in order to:

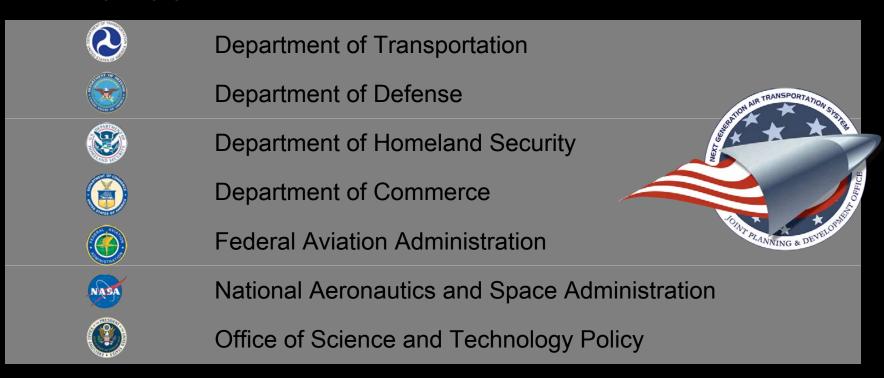
- Increase capacity and reliability
- Improve safety and security

These improvements to the air transportation system will be achieved by applying:

- Space-based surveillance and navigation to improve upon the current radar and radio beacon capabilities
- Digital communications to expand the capabilities of the current analog voice system
- Advanced automation of the air traffic management functions to improve controller and aircrew safety and productivity

#### The NextGen Initiative

- The Next Generation Air Transportation System (NextGen)
  - Joint Planning and Development Office planning and coordinating
  - FAA NextGen Implementation and Integration Office implementing
- Partners



## NextGen Institute: Mechanism for Industry Involvement

#### Primary Role of the Institute

- To provide a mechanism for private sector to actively engage with government in defining, developing, and implementing the NextGen System with the JPDO
  - 16-member Institute Management Council (IMC)
  - 250+ private sector Working Group participants

#### Nine Working Groups

Each has a government and an industry co-chair

### Benefits to Airports

- Increased safety in the airport operational environment
- Better use of existing capacity
- Greater design flexibility
- Reduced environmental impact

#### **Key Capabilities:**

**Network Enabled Access** 

**Broad Area Precision Operations** 

Weather Assimilated into decisions

Aircraft Trajectory Based Operations

**Super Density Operations** 



#### NextGen Transformation

From...

**To...** 

**Ground-based Navigation and Surveillance** 

**Voice Radio Control** 

**Disconnected Information Systems** 

**Manual, Tactical Air Traffic Control** 

**Fragmented Weather Forecasting** 

**Visibility Limited Airfield Operations** 

**Forensic Safety System** 

**Inefficient Security Screening** 

**Current Aircraft Environmental Footprint** 

Satellite-based Navigation and Surveillance

**Digital Data Exchange** 

**Net Centric Information Access** 

Automation Assisted Air Traffic Management

**Probabilistic Weather Decision Tools** 

**Equivalent Visual Operations** 

**Prognostic Safety System** 

**Integrated Security Risk Management** 

**Reduced Aircraft Environmental Footprint** 

# Joint Planning and Development Office NextGen

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